

## CIVIL AERONAUTICS JOURNAL



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## Category Listings for Airplane Designs Are Studied by the CAA

In an effort to simplify airplane design, the Civil Aeronautics Administration has proposed a new category system of airworthiness requirements.

Discussions have been held with representatives of the Aeronautical Chamber of Commerce, but the reaction of all interested is sought by the Administration and comment on the outlined proposals should be sent to Fred M. Lauter, Director of Safety Regulation, CAA, Washington, D. C.

The whole subject has been studied for some time and special requirements already are in effect in the transport type airplanes.

The basic thought behind the system is to establish various design categories based on intended operational purposes. By this procedure the requirements can be better adapted to the needs of each type of operation. This will permit manufacturers to design aircraft for specific uses and will make it possible for them to incorporate only those design features which are essential for the intended use, thus increasing the over-all efficiency of the design for the particular operations contemplated.

It should be understood, however, that there is no intent to restrict certification of designs to only one category. If desired, compliance with the requirements of several categories should be shown and the airplane involved could be operated in these various categories under the provisions of the pertinent operating requirements.

As an illustration, an airplane which complies with the training category requirements at a weight of 1,500 pounds, could be operated in the normal category with a somewhat higher weight, whereas it might also be eligible to operate in the aerobatic category at a reduced weight.

At a recent conference of several CAA

divisions, a tentative agreement was reached that the following categories represent a logical break-down as a start but should not be construed as a final proposal: Aerobatic, Training, Normal, Transport, and Special Purpose.

The studies completed to date reveal that at least three basic strength classes should be established. In the discussion which follows, these classifications will be identified in the order of decreasing strength.

**Aerobatic, Strength Class I:** The intent of this category is obvious from the name. Emphasis will be placed on strength and visibility for aerobatic flight and on power-plant installations satisfactory for at least short periods of inverted flight.

(See *Plane Categories*, page 57)

### Postwar Aviation Problems

Prospects for postwar private flying and the problems which the manufacturers of the planes will encounter together with suggestions for methods of solution are discussed in this issue of the Journal by men qualified to speak. William A. M. Burden, who prior to his appointment as Assistant Secretary of Commerce, was Special Aviation Assistant to the Secretary, spoke on the future of private flying. Stanford J. Stelle, Chief of Aircraft and Flight Equipment, discussed problems of light aircraft, and J. H. Geisse, Engineering Consultant, discussed aircraft construction problems. The Journal is unable to print the full text of their speeches, however, copies are obtainable from the CAA Information and Statistics Service, Commerce Building, Washington 25, D. C.

### CAA Tower Control To End in 23 Cities

The Civil Aeronautics Administration has announced that because of the withdrawal of funds by the Army Air Forces, its operation of airport traffic control towers in 23 cities will be terminated by June 30.

Operation of these towers was undertaken by the CAA at the request of the War Department because of the heavy military traffic. The War Department has advised the CAA that it no longer considers these towers necessary to the war effort.

At the present time there are 115 such towers in operation, including those to be eliminated. Many of these towers were in existence as municipal activities before the CAA was asked by the War and Navy Departments to assume management. Where no tower existed or additional equipment was needed, the CAA was given an appropriation by Congress to establish facilities desired by the armed services.

Mayors have been notified of terminations in the following cities: Akron, Ohio; Austin, Tex.; Battle Creek, Mich.; Burlington, Vt.; Chattanooga, Tenn.; Coeur d'Alene, Idaho; Daggett, Calif.; Des Moines, Iowa; Helena, Mont.; Houston, Tex.; Indianapolis, Ind.; Kansas City, Mo.; Louisville, Ky.; Mobile, Ala.; New Orleans, La.; Niagara Falls, N. Y.; Ogden, Utah; Omaha, Nebr.; Philadelphia, Pa.; Pocatello, Idaho; St. Paul, Minn.; Tampa, Fla.; and Yakima, Wash.

### R. McLean Stewart Resigns

R. McLean Stewart has resigned as Executive Director of the Civil Aeronautics Administration pilot training program and will return to private business on or about May 15.

Stewart was placed in charge of the pilot training program in January 1943 and since that time 200,000 army and navy men have received flight training in CAA supervised schools.

# Set Up Merit Service Job Sheet For Airport Manager, CAA Advises

First step toward making a publicly owned airport pay is to hire a competent manager and give him the power to run the airport, according to the new CAA airport management section.

How can cities go about getting the man for the job? The section is suggesting that qualifications be set up on an experience or merit job sheet basis as has been done by Birmingham, San Diego, Los Angeles, New York, Chicago, and many other cities—the yardstick being the applicant's administrative ability, experience in municipal affairs, and aviation background.

The merit service qualifications recently drawn up for San Diego by CAA's 6th regional manager are in line with the recommendations of the CAA airport management section.

## Has Full Day

In describing the work required, the job sheet states that an airport manager must plan and direct proper airport maintenance and operation, supervise the planning and direction of improvements and future expansions, maintain pleasant and orderly working relationship with tenants and patrons, and operate the port in accordance with sound business administration. He will be responsible for the maintenance of runways, taxi strips, aprons, field area, fencing, lighting, roads, parking lots, hangars, administration buildings, and equipment. He must be familiar with airport operation, safety requirements and aviation regulations. He must arrange and maintain proper coordination and cooperation of the various interests using the airport.

The requirements outlined for a manager of a large airport on the San Diego job sheet give preference to college graduates in civil, mechanical, electrical or aeronautical engineering, who have had 3 years of good administrative experience, with one year of this time spent as airport manager. Substitution of education for practical experience is allowed as an alternative.

## Management Course

Realizing that it may be hard to find available men with these qualifications, the airport management section is recommending that universities include an airport management course in their curriculum. The section believes that such a course, combined with actual experience at an airport, will be a step forward in providing trained men for the job.

Among the schools which have already adopted or plan to adopt such a course are the University of Southern California, the University of Texas, the University of Oklahoma, and Stanford University.

After selecting the best qualified man for the job of directing a large business enterprise like an airport, the section endorses the policy of allowing the appointee as much freedom as possible in

determining the policies, directing the use of finances and making the decisions for running the airport.

A uniform system of accounting, less variation in the landing and rental fees charged by the different airports, and a more practical basis for determining what these fees should be, are among other basic needs discovered by J. Kirk Baldwin, head of airport management, in his talks with state and municipal officials during a recent cross-section tour of the country's airports.

## Airport Accounts

At present each locality handles records in the best way it sees fit. Most cities now use in other departments a municipal accounting system which has been endorsed by the American Municipal Association or the U. S. Conference of Mayors. The airport accounts could easily be set up to conform with the rest of the system, Baldwin points out.

"With a uniform accounting system," Baldwin said, "it would be possible to go into any airport, check over the items, and see at a glance why this airport is making money, or why this one isn't." The aid of the American Municipal Association and the U. S. Conference of Mayors has been enlisted in establishing this system.

Another measure being considered by a number of cities is that of including the airport in the city's park system. Beautifying and making the airport into a recreational spot would encourage additional concessions.

Set up recently to study the financial problems of publicly owned airports, the CAA airport management section plans to issue a bulletin shortly which will contain an analysis of the recent survey made of the larger airports. It will give examples of the good and also of the undesirable features of various airports which will serve as a guide to the individual airports in what to do and what not to do. The bulletin will be revised as the study progresses.

## Instrument Landing Tests Covered in New Report

Preliminary T. D. Report No. 36, issued under date of October 1943, has just been released. This study, entitled "The CAA-RTCA Instrument Landing System Tests and Modifications, Part II, Tests and Modifications" was prepared by Henry I. Metz of CAA's Technical Development Division in cooperation with the International Telephone Development Co., Inc.

The report describes the development work to make the instrument landing system at Indianapolis comply with standards set up by the Radio Technical Commission for Aeronautics. It also outlines the general operation of the system and discusses the receiving equipment in various aircraft.

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## INFORMATION AND STATISTICS

## Preflight Exam Time For H. S. Students

The 1944 CAA preflight examinations are in progress this month at high schools throughout the country and will continue until June 30. The examinations give high school students the chance to gain the required ground school credits in working toward a private pilot certificate.

Aeronautics courses were started in high schools and the first preflight exams were given under CAA sponsorship last year. Those failing in one or more sections of the examinations in previous attempts may take them over.

High schools which have not already submitted applications to the CAA for the "Examination on Aeronautical Knowledge," must do so 15 days preceding the date on which the examination is to be given. Applications for examinations may be secured from state departments of education; CAA regional and district offices; or from the General Inspection division at Washington 25, D. C.

## National Airport Given Security Award By OCD

A concert by the Army Air Forces 100-piece band and a talk by Col. F. A. McNamee, Deputy National Director of the Office of Civilian Defense, featured the ceremonies at the Washington National Airport Sunday, April 30.

The occasion was the presentation of the OCD National Security Award to the airport, with John Russell Young, District of Columbia Commissioner, Regional OCD Director, making the award to Hervey Law, Civil Aeronautics Administration manager of the airport.

# Private Flying and Problems of Plane Makers Discussed

Two phases of postwar aviation, private flying and its development and structural problems of light aircraft, were discussed recently in Detroit before the Institute of Aeronautical Sciences by William A. M. Burden who before his appointment as Assistant Secretary of Commerce was Special Aviation Assistant to the Secretary, and Stanford J. Stelle, chief of the Aircraft Flight Equipment division of the CAA.

Mr. Burden's address in part follows: "Private flying has been the younger brother of the American aeronautical family. So far it has received only a small part of the engineering attention and dollar investment that have been devoted to military and transport aviation.

"Purely from the standpoint of our national economy, the development of a large and healthy industry for the manufacture of personal aircraft, with all the collateral activities of airport operation servicing and training, is of great national importance. But the growth of private flying is more than a purely commercial matter. It has important implications for national defense. The number of Americans who learn how to fly as a part of their ordinary civilian existence is an index of our national air strength. It also has a very real bearing on the education of our people and their ability to comprehend and solve the problems of the air age.

"The personal airplane is an essential piece of equipment for such education and private flying is a school of experience in which aerial skills can be perfected. You who have been entrusted with the development of this equipment and this school of experience therefore share with us in government the responsibility to the country of insuring that the equipment is as good and the school as large as we can make them.

## Work for Both

"Since it is our joint responsibility, neither of us will have measured up to that responsibility if we have not given full cooperation to the other. We are partners in a great enterprise and we can do the job better if we determine in advance in which fields industry will be the senior partner and in which government. Increased utility depends above all on two things. First—Improvement in aircraft and instrument design which will make the private aircraft easier, safer and more economical to fly and more independent of weather. To quote a well known designer, practically everything desirable in the private airplane which does not come under the heading of safety, comes under the heading of low cost. Second—The expansion of our airport system so that the private pilot can get where he wants to go.

"In the field of basic research, which provides the raw material for design, government can, I believe, play a useful and important role. The wind tunnels and research facilities of the National

(See Burden, page 63)

Mr. Stelle's address in part follows:

"The CAA War Training Service has been operating a fleet of several thousand light commercial airplanes on an intensive pilot training program for civilians and for the army and the navy. Up to the present, approximately eleven million hours of instruction have been given.

"Continuous year-round operation has been a necessity to meet schedules of the army and navy; consequently, operation has been carried on under all weather conditions. Airports with paved runways and adequate hangar and shop facilities have not been present at certain centers. While such a condition is not conducive to long life of airplanes, it tends to quickly bring out any inherent weaknesses.

"As a result of regular visits to each flight training operation, maintenance supervisors furnish the regional and Washington office of War Training Service with reports on each airplane approximately every 30 days.

## Difficulties Presented

"A resume of some of the difficulties reported is presented.

"Propellers and hubs have given comparatively little trouble. The most prevalent are as follows: Thin trailing edge sections have been cracked or broken out during hand cranking operations. Such has generally been brought about by rings worn on the fingers of the person cranking.

"Screws or rivets holding metal leading edges have often become unsoldered and have loosened.

"Blades have shifted in respect of metal tipping leaving a small portion of the blades adjacent to tipping exposed to weather due to absence of protective covering when such occurs.

"Wearing down of protective coatings with admission of moisture has probably been responsible for certain lamination separations. Deeper penetration of protective coatings may eliminate such a condition and greatly prolong propeller life.

"One major siege of engine mount cracking was experienced during operation of the fleet of airplanes and such failures were attributable to a design which allowed strain to be localized at a particular point in the mount.

"Much has been reported regarding engine controls within the cockpit. The average light airplane contains no provision for throttle quadrant friction plates, and creeping throttles have reportedly resulted in difficulties being



## It's Major Bong Now

The day after the then Capt. Richard I. Bong, a CAA trained flier, shot down his twenty-seventh enemy plane General MacArthur advanced him to the rank of major on April 13. Bong's record makes him top man for planes shot down though Capt. Don Gentile is credited with 30 planes, 7 of which, however, were destroyed on the ground.

experienced by students. Control markings as to function and operation have proven to be generally unsatisfactory. One unfamiliar with a particular airplane would be greatly aided if markings were such that they would remain legible and bright during the entire life of the airplane. Serious difficulty has been reported on one model of airplane in which the occupant of the front seat alone was able to reach the carburetor heat control.

"Undoubtedly cockpit heaters have been designed solely with the thought in mind that the airplanes would be used only in the mildest of weather. It is possible that some type of satisfactory independent heating system with outlets at both seats could be devised for the light airplanes.

"It is generally quite difficult to inspect and work on the extreme tail end of the average light plane fuselage. This fact coupled with generally inadequate drain provision is probably responsible for tubes in this section quite frequently being rusty and the section being dirty.

"Provision of a tail tie down ring on the fuselage would prove extremely valuable as would tail lifting lugs or handles. Such anchorage and elimination of much fabric damage would be the result.

"Distortion of turnbuckle forks has been reported in those cases where control stops have worn to the extent that it is possible for the control horn to reach the position that it bears against the top of the U of the fork. In addition, worn control stops have reportedly been responsible for 'violent' performance in certain maneuvers by permitting excess control surface travel. Thought should be given to making such stops incapable of rapid wear or shifting.

(See Stelle, page 63)

# Safe Utility Plane Will Stay Sold Geisse Tells Light Aircraft Makers

Light aircraft manufacturers in a recent meeting at Detroit heard results of surveys made by J. H. Geisse, CAA engineering consultant, on why larger numbers of pre-war airplanes were not sold, why more people did not retain ownership longer, and why student pilots did not continue with their flying courses. The paper was given at the National Light Aircraft meeting of the Institute of Aeronautical Sciences.

After analyzing the pre-war market, Geisse expressed his views on the design improvements that would have to be made before more people would buy planes, keep them, and fly them.

Geisse's study of annual airplane registration for 1930 to 1939 showed that approximately one-third of all the owners kept their aircraft for one year or less, and another 22 percent retained ownership for 2 years.

Each year from 1933 to 1938 the percentage of students who continued on to secure pilot certificates stayed at around 15 percent.

## Upkeep Costly

In questionnaires sent to former owners, and individuals who had taken out student permits but had given up flying before receiving pilot certificates, Geisse gathered data on the causes of the high rate of attrition.

Seventy-seven percent of the owners, he found, purchased planes with the initial intention of continuing private airplane ownership. In the reasons given for discontinuing ownership, 30 percent indicated that the expense was greater than anticipated. Added to these were 19.7 percent who gave up ownership because of a change in financial status, making a total of 50 percent who gave up ownership because of reasons of cost.

The results of the student pilot survey again showed that 50 percent gave up flying because of financial reasons. Excluding the 28 percent who expected to fly commercially, 50 percent wanted to fly for pleasure.

While the hazards of flying did not appear directly in the surveys as a reason for giving up flying, Geisse gave insurance data to show that hazards were responsible for the high rate of insurance and therefore contributed in large measure to the item of operating cost. Those who gave up private airplane ownership in the past because of cost did so because of operational cost—not initial cost, he said.

## Suggested Improvements

In discussing ways of making private planes safer, giving them more utility and making them a greater source of pleasure to their owners, Geisse threw a multiplicity of challenges to the light aircraft industry.

"Practically no effort has been made to develop and to provide instruments

which would simplify instruction, reduce the cost in time and money of learning to fly, and which, incidentally would reduce the hazards of flying," he said. "I refer particularly to the air speed meter and the ball-bank indicator. The greatest hazard in flying is the stall particularly when one wing is stalled before the other as a result of yaw. As a stall warning indicator the air speed meter is worse than useless since the stall may occur at any air speed. The ball-bank indicator is not a direct indicator of angle of yaw. Yaw may exist with a ball-bank indicator centered and the relationship between the angle of yaw and the reading of the ball-bank indicator varies from one airplane to another depending upon the airplane resistance to sidewise motion and varies in each airplane with the air speed. Furthermore, the form of this instrument, resembling as it does a spirit level, definitely has encouraged the student to correct for yaw with the ailerons which is just what he should not do. It would be a simple matter to provide the airplane with instruments which would read directly in angle of attack and angle of yaw. The angle of attack meter would provide the student with a stall warning which would be approximately correct irrespective of airplane loading, atmospheric density and hence altitude and temperature, degree of acceleration of the airplane whether in a pull out or a steep turn, and the amount of power being used.

## New Air Publications

The following may be secured from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

**Annual Airline Statistics**—For convenience in studying airline operations, the Civil Aeronautics Board has compiled annual airline statistics for the five-year period of 1938-42. Among the data contained in this work are the yearly totals for each of the carriers of the miles flown, passengers, mail and express carried, operating expenses, balance sheet accounts, and aircraft performance and utilization. Totals are also given for the transport industry as a whole. Price 50 cents.

**Opinion 55**—"Universal Air Freight Corporation—Investigation Of Forwarding Activities," Docket No. 723. Price 5 cents.

**Opinion 56**—"Interlocking Relationships—W. A. Patterson, Et Al," Docket No. 639. Price 5 cents.

**Opinion 57**—"Caribbean-Atlantic Airlines, Inc.—Puerto Rican Operations," Docket No. 277. Price 5 cents. The three opinions listed, 55, 56, and 57, are now available in printed form as advance sheets prior to their inclusion in Volume III of the Civil Aeronautics Board Reports.

It would also indicate to him where he could get his maximum gliding range and where he could get his best climbing position independent of all of the above variables.

## Reversible Propeller

"Next to eliminating any change in speed with throttle setting it would be highly desirable if some way could be found whereby one control could be provided which would control the inclination of the flight path throughout its full range including the steepening of the glide after the throttle is closed. There is one way of doing this which I do not believe has been given proper consideration. This involves the use of the reversible propeller. Trials of reversible pitch propellers ended in crack-ups in at least two cases. In both cases the pilots decided to go around again and opened the throttle with the propeller set in full reverse position. Undoubtedly these accidents were in some measure responsible for failure to continue with this development. This danger could be completely avoided by giving the pilot direct control of the pitch of the propeller and using a speed governor to operate the throttle. Such an arrangement would have the additional advantages of reducing the possibility of the engine stopping and of making the inertia of the engine and propeller available for temporary increases in power available."

In discussing ways of increasing the utility of the personal plane, Geisse pointed out that the accessibility of airports is within the control of the plane builders and not the community.

"The availability and accessibility of airports for private fliers will depend upon how big the airports must be and what kind of surface they must have. If private planes are built so they can use small one-way landing fields, these fields will be provided wherever there is the slightest demand," he said.

## Low Wing Loading

The use of a low wing loading was presented as one way of reducing the landing and take-off runs, and also reducing the cost of operation per hour. Geisse pointed out that the difficulty of landings and take-offs in high winds, one of the past objections to the use of low wing loadings, has been eliminated by the use of the tricycle landing gear. The other objection to the use of low wing loading, susceptibility to bumps, could also be answered by the use of shock absorbing wings.

Geisse also expressed belief in the feasibility of the roadable plane as a utility plane. "Roadable airplanes offer a partial answer to the problem of weather interruption for the private pilot which is not answered by the provision of more suitably located airports," he said.

Improved vision and reduction of noise and vibration are two objectives toward which the industry should work to increase the pleasure of flying, Geisse stated.

## Mexican Airline Asks for Route To San Antonio

Aero-Transportes, S. A., a Mexican airline, has applied to the Civil Aeronautics Board for international service into the United States. The airline proposes service from Mexico via Piedras Negras to San Antonio and return with a stop at Eagle Pass, Tex.

Aero-Transportes now operates a fleet of seven planes on various routes out of Monterrey. Terminals include Piedras Negras and Matamoras on the Mexican-Texas border, and east and west coast cities through the northern Mexico area.

If given the route, the carrier expressed the intention of adding to its fleet the most modern practical multi-engine equipment available for the run into San Antonio.

The airline contends that the proposed route will provide needed service between the two countries during the war, and will also provide a needed postwar communications service for Mexican nationals on Aero-Transportes routes and for Americans in the San Antonio area in their commerce with each other.

Present airline transportation from the eastern part of the United States into Mexico is principally through Fort Worth and Brownsville, both some distance from San Antonio, the applicant said.

Aero-Transportes now operates routes from Monterrey, Monclova, Nueva Rosita, Piedras Negras; Monterrey to Matamoras; Monterrey, Saltillo, San Luis Potosi; Tampico, San Luis Potosi; Aguascalientes, Guadalajara, Tepic and Mazatlan.

### Plane Categories

(Continued from page 53)

**Training, Strength Class II:** Permissible operations for this category will include maneuvers essential to primary training, such as spins, chandelles, wingovers, etc., but will not include abrupt maneuvers, such as snap maneuvers. It is tentatively proposed to specify somewhat more severe shock absorption requirements for this category than are now contained in the Civil Air Regulations.

**Normal Strength Class III:** Airplanes in this classification will be intended for nonacrobatic flight and will bear a placard "Intentional Acrobatics Prohibited." Airplanes in this category will have to meet requirements emphasizing good controllability at the stall.

**Transport Category, Class III:** This category will be essentially the same as the transport category which now exists. A cargo subdivision may be incorporated.

**Special Purpose:** This will be considered as a "catch-all" category for all aircraft which will not logically fall into any of the above categories. All airplanes in this category will be considered as separate cases and will carry the NR designation.



## Australians Study CAA Methods

A first-hand study of how the Civil Aeronautics Administration operates is being made by representatives of the Australian government. CAA experts have advised them on the purchase of flying aid and equipment for use on their airway system, similar to the federal airways system of this country.

The three Australians who are now here for more CAA facts are: J. L. Smith, Director Aircraft division, War Supplies Procurement; Roy M. Badenach, Chief Electrical Engineer, Department of Civil Aviation; and Daniel McVey, Director General of Civil Aviation. In the accompanying cut they are shown in left to right order with Charles I. Stanton, Administrator of Civil Aeronautics, as they emerged from a recent CAA staff meeting.

## Uruguay Plans to Modernize Airways

Uruguay, with plans drawn up for a larger and more modern airways system, has sent two representatives here to study the latest developments in radio communications.

On the mission are Lt. Lesar A. Piacenza, chief radio inspector, and Lt. Juan A. Villanueva, pilot, both of the Uruguayan air force. They arrived early in April and have been making an extensive inspection tour of air navigational and communications facilities in this country to see what they can adapt for installation in the proposed Uruguayan airways system.

In Washington they were conducted through the National Airport where they were shown how weather reports are collected and broadcast, how traffic is handled on the airways and over the airport by the center and tower, and how radio range installations work in the country's model airport. They also visited the American Airlines communications station to get a slant on the radio operations of commercial carriers.

Visits to factories making aviation radio equipment and an extensive tour of military operations will complete their mission.

Uruguay expects to adapt the type of radio range and methods of airport traffic control used in the United States to their system, and CAA officials are reviewing the proposed airways plans of that country and will make recommendations.

### CAA Trains Armed Forces

The CAA has trained 1,536 men of the armed forces in traffic control work. This includes 605 army and 628 navy enlisted control tower operators and 303 army flight control officers.

## Two Kansas Cities Get Additional Air Service

Additional service to Topeka and Hutchinson, Kans., has been authorized by the Civil Aeronautics Board.

Continental Airlines will serve Hutchinson on its Denver-Salina route. Topeka has been included as an intermediate point on Braniff's route between Kansas City, Mo., and Wichita, Kans., and will also receive TWA service on the carrier's transcontinental route between the same cities.

In answer to Greyhound's request that the authorized service to the points involved be temporary only, pending final determination of the general question of local-feeder air service, the Board pointed out that three of the communities involved are already authorized intermediate points on the line of existing air carriers.

The Board also pointed out that Hutchinson is now on Continental's route 43, and by adding the city to route 60 a connecting link is provided between Continental's two routes, thus providing Pueblo, Hutchinson and intervening points on route 43 with direct air service to Salina, Topeka and Kansas City.

### CAA-Trained Flier Honored

Among the fliers trained by the CAA who have been decorated for signal achievement is Captain Thomas F. Moore, Marine Corps, who took the Civilian Pilot Training course at Miami, Fla., early in 1940. He was awarded the Navy Cross and Silver Star. Captain Moore served at Guadalcanal and Midway as a dive bomber pilot prior to his being ordered to Quantico, Va., as instructor in the U. S. Marine School there.

# DOMESTIC AIR CARRIER STATISTICS

*Operations for February 1944*

Operator	Routes operated	Revenue miles flown	Revenue passengers carried <sup>1</sup>	Revenue passenger-miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
All American Aviation, Inc.	Pittsburgh-Huntington, Jamestown, Williamsport, Harrisburg, Washington.	77,944	0	0	7,484	1,113,485	0	
American Airlines, Inc.	Dallas-Los Angeles New York-Chicago Boston-New York Boston-Cleveland Cleveland-Nashville New York-Fort Worth Washington-Chicago Chicago-Fort Worth Buffalo-Toronto El Paso or Fort Worth-Mexico City	686,439 326,050 87,338 13,882 52,274 58,173 129,353 95,708 2,888 118,213	13,196 12,395 8,385 1,136 3,794 15,023 4,414 3,254 448 1,889	10,948,193 4,641,440 1,470,867 160,658 848,251 7,851,492 1,872,585 3,503,483 34,048 1,867,774	147,303 531,036 263,987 26,293 76,738 268,797 116,623 49,190 1,249 17,895	129,593,830 213,971,886 40,914,106 4,867,104 18,774,692 137,619,356 53,926,234 27,518,475 94,924 16,834,354	12,179,080 5,455,933 1,695,624 261,184 1,064,127 9,080,852 2,217,740 1,810,695 59,584 2,110,100	89.89 85.07 86.74 61.51 79.71 86.38 84.44 83.03 57.14 88.52
Braniiff Airways, Inc.	Total	2,060,318	53,515	31,198,791	1,499,111	644,164,961	35,943,919	86.80
Chicago & Southern Air Lines, Inc.	Chicago-Dallas Denver-Brownsville San Antonio-Laredo	178,168 121,513 5,700	5,264 6,732 591	2,943,115 1,885,949 88,650	42,031 30,022 311	24,621,655 7,708,743 46,650	3,103,928 2,117,576 114,000	94.82 89.06 77.76
Continental Air Lines, Inc.	Total	305,381	11,684	4,917,714	72,364	32,467,048	5,335,504	92.17
Delta Air Corporation.	Chicago-New Orleans Memphis-Houston	136,838 25,228	5,051 1,062	2,179,524 360,732	56,623 7,720	23,136,029 3,462,584	2,727,586 483,200	79.91 74.65
Eastern Air Lines, Inc.	Total	162,066	5,610	2,540,256	64,343	26,598,613	3,210,786	79.12
Inland Air Lines, Inc.	Denver-El Paso Pueblo-Tulsa	87,838 29,579	2,495 1,116	802,293 229,115	7,840 2,308	4,661,559 440,275	954,614 314,219	84.04 72.92
Mid-Continent Airlines, Inc.	Total	117,417	3,303	1,031,408	10,148	5,101,834	1,268,833	81.29
National Airlines, Inc.	Charleston or Savannah-Fort Worth Atlanta-Chattanooga	169,699 37,393	7,240 2,076	3,062,632 674,016	39,995 22,991	17,057,137 7,678,344	3,431,249 761,411	89.26 88.52
Northeast Airlines, Inc.	Total	207,092	9,208	3,736,648	62,986	24,735,481	4,192,660	89.12
Northwest Airlines, Inc.	New York-San Antonio or Brownsville New York-Miami Chicago-Jacksonville Atlanta-Tampa	345,347 559,121 136,789 20,020	9,929 5,516 5,423 899	5,289,287 8,050,044 2,328,197 358,312	111,834 143,391 66,744 8,120	60,545,917 117,456,528 31,378,431 3,210,121	6,789,487 9,142,680 2,604,400 400,734	77.90 88.05 89.39 89.41
Pennsylvania-Central Airlines Corporation.	Total	1,061,277	27,371	16,025,840	330,089	212,590,997	18,937,301	84.63
Transcontinental & Western Air, Inc.	Denver-Great Falls Cheyenne-Huron	42,610 22,988	870 0	290,584 0	1,874 8	494,708 3,044	444,177 0	65.42
United Air Lines, Inc.	Total	65,598	870	290,584	1,852	497,752	444,177	65.42
	Minneapolis-Tulsa Minneapolis-Des Moines-St. Louis or Kansas City	121,794 38,898	3,586 964	1,046,016 277,136	11,174 2,102	2,825,469 544,782	1,499,974 487,680	69.74 56.53
	Total	160,602	4,492	1,323,152	13,276	3,370,251	1,987,654	66.57
	Jacksonville-Key West via Miami Jacksonville-New Orleans	109,243 105,033	5,561 3,306	1,244,175 1,276,494	12,839 12,569	3,272,963 4,759,643	1,508,066 1,396,932	82.50 91.37
	Total	214,276	7,639	2,520,609	25,408	8,032,606	2,904,998	86.77
	Boston-Presque Isle and Moncton	67,595	2,755	654,387	9,858	1,800,230	1,419,495	46.10
	Chicago-Twin Cities-Seattle; Fargo-Winnipeg Minneapolis-Duluth	423,780 6,578	11,306 0	5,868,386 0	156,673 981	83,098,420 140,283	7,583,461 0	77.38
	Total	430,358	8,839	5,868,386	157,654	83,238,703	7,583,461	77.38
	Norfolk-Detroit Detroit-Milwaukee Pittsburgh-Buffalo Pittsburgh-Birmingham	185,142 11,720 11,957 29,240	15,037 1,106 1,106 1,106	3,091,223 172,829 146,639 384,543	252,026 15,982 7,866 9,177	44,365,576 2,701,821 1,272,940 3,455,507	3,831,199 245,700 232,197 609,378	80.69 70.34 63.15 63.10
	Total	297,159	17,208	3,795,294	285,051	51,795,844	4,918,474	77.16
	New York-Los Angeles Dayton-Chicago Boulder City-San Francisco Kansas City-Pittsburgh via Chicago St. Louis, Detroit via Cincinnati and Dayton Washington-Dayton via Columbus	822,694 24,305 63,541 222,305 52,945 38,313	18,576 1,549 1,950 5,279 3,123 1,594	11,733,816 366,030 444,275 2,836,243 704,634 543,589	437,087 30,066 20,022 189,187 43,005 19,682	250,422,885 6,831,886 9,531,218 92,157,360 6,393,478 730,029	13,680,303 153,883 1,034,497 3,185,100 1,033,381 74,46	85.77 80.64 91.28 89.05 68.19 74.46
	Total	1,224,103	21,176	17,128,587	739,049	370,117,261	20,117,193	85.14
	New York-San Francisco Salt Lake City-Seattle Seattle-San Diego Seattle-Vancouver Washington-Toledo	1,404,447 90,136 393,938 7,680 33,930	19,654 2,908 19,159 1,085 8,950	18,670,019 1,738,498 7,507,839 143,477 587,779	574,885 24,710 114,639 2,037 9,833	463,374,574 14,701,809 44,162,608 241,983 4,034,858	19,588,457 2,070,128 7,812,043 149,684 658,188	95.31 83.98 96.11 95.85 89.30
	Total	1,930,131	43,656	28,647,612	726,104	526,515,832	30,278,500	94.61

<sup>1</sup> The total passengers carried for each airline is an **unduplicated figure** with the exception of United, whose unduplicated figure was not available.

NOTE.—Adjustment to Northwest Airlines' January report on express pounds carried: [Chicago-Seattle 163,699; total 164,794. (Carried in Apr. 15 issue.)

### Operations for February 1944—Continued

Operator	Routes operated	Revenue miles flown	Revenue passengers carried <sup>1</sup>	Revenue passenger-miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
Western Air Lines, Inc.	San Diego-Salt Lake City Salt Lake City-Great Falls Great Falls-Lethbridge	148,635 28,930 8,618	5,394 865 373	2,576,695 374,854 55,981	72,565 1,149 232	38,966,196 411,214 30,101	2,862,764 570,960 174,905	90.01 65.65 32.01
	Total	186,183	6,147	3,007,530	73,946	39,407,511	3,608,629	83.34
	<b>Sub grand total</b>	<b>8,507,500</b>	<b>223,474</b>	<b>122,686,738</b>	<b>4,078,753</b>	<b>2,031,548,409</b>	<b>142,151,584</b>	<b>86.31</b>
Colonial Airlines, Inc. Hawaiian Airlines, Ltd.	New York-Montreal Honolulu-Hilo and Port Allen	53,524 70,920	2,721 8,016	853,864 1,147,871	11,963 511,414	3,841,312 81,006,127	1,124,004 1,254,096	75.97 91.53
	<b>Grand total</b>	<b>8,631,944</b>	<b>234,211</b>	<b>124,688,473</b>	<b>4,602,130</b>	<b>2,116,395,848</b>	<b>144,529,684</b>	<b>86.27</b>

<sup>1</sup>The total passengers carried for each airline is an unduplicated figure with the exception of United, whose unduplicated figure was not available.

### Operations for the First Two Months of 1944 as Compared with the Same Period of 1943

Operator	Revenue miles flown January-February		Revenue passengers carried (unduplicated) January-February		Revenue passenger miles flown January-February	
	1944		1943		1944	
	1944	1943	1944 <sup>1</sup>	1943	1944	1943
All American Aviation, Inc.	160,362	149,501	0	0	0	0
American Airlines, Inc.	4,298,339	3,999,770	112,078	104,294	66,124,474	60,625,926
Brannif Airways, Inc.	663,659	595,851	24,645	21,597	10,734,606	8,684,390
Chicago & Southern Air Lines, Inc.	340,425	336,629	12,021	11,155	5,433,258	4,772,861
Continental Air Lines, Inc.	247,901	246,991	6,993	7,090	2,228,630	2,189,805
Delta Air Corporation	440,741	324,233	19,907	15,160	8,073,354	5,850,223
Eastern Air Lines, Inc.	2,281,385	2,041,447	58,782	52,982	35,209,232	31,514,944
Inland Air Lines, Inc.	139,071	127,921	1,892	1,664	642,470	570,723
Mid-Continent Airlines, Inc.	335,204	177,543	9,106	3,234	2,660,782	939,202
National Airlines, Inc.	410,925	267,334	14,002	8,964	4,915,214	3,131,482
Northeast Airlines, Inc.	142,482	69,808	5,830	2,412	1,469,147	575,453
Northwest Airlines, Inc.	888,269	558,944	18,491	8,767	12,525,730	5,602,646
Pennsylvania-Central Airlines Corporation	503,776	397,437	36,680	25,264	8,163,135	5,663,224
Transcontinental & Western Air, Inc.	2,623,217	2,378,263	45,604	40,125	37,193,467	29,237,973
United Air Lines, Inc.	3,997,275	3,173,873	89,347	52,115	60,254,679	42,695,128
Western Air Lines, Inc.	377,493	248,180	11,959	8,421	5,958,788	3,330,194
<b>Sub total</b>	<b>17,850,524</b>	<b>15,093,725</b>	<b>467,337</b>	<b>353,234</b>	<b>261,586,966</b>	<b>204,783,974</b>
Index (1943=100)	118.26	100.00	132.30	100.00	127.74	100.00
Colonial Airlines, Inc. Hawaiian Airlines, Ltd.	111,316 146,143	92,573 143,677	5,819 17,149	3,826 17,966	1,791,776 2,442,766	1,102,349 2,559,904
<b>Grand total</b>	<b>18,107,983</b>	<b>15,329,975</b>	<b>490,305</b>	<b>375,026</b>	<b>265,821,508</b>	<b>208,446,508</b>
Index (1943=100)	118.12	100.00	130.74	100.00	127.53	100.00

Operator	Express carried (pounds) January-February		Express pound miles flown January-February		Passenger seat-miles flown January-February		Revenue passenger load factor (percent) January-February	
	1944		1943		1944		1943	
	1944	1943	1944	1943	1944	1943	1944	1943
All American Aviation, Inc.	15,372	9,345	2,304,130	1,213,138	0	0	87.50	79.40
American Airlines, Inc.	3,280,095	2,556,798	1,474,216,277	1,303,450,735	75,572,520	75,597,955	86.51	86.51
Brannif Airways, Inc.	148,352	199,921	69,954,204	92,420,066	11,634,162	10,038,335	92.27	72.21
Chicago & Southern Air Lines, Inc.	136,933	115,192	56,501,207	51,334,800	6,747,814	6,609,254	80.52	82.46
Continental Air Lines, Inc.	18,784	18,050	8,811,802	5,136,752	2,702,697	2,721,060	80.48	80.48
Delta Air Corporation	131,374	75,677	51,592,124	28,297,787	8,989,843	6,837,624	89.81	85.56
Eastern Air Lines, Inc.	737,911	642,216	478,636,630	414,728,139	40,344,145	37,988,016	87.27	82.96
Inland Air Lines, Inc.	4,423	5,845	1,041,266	1,239,135	977,226	986,423	65.74	57.86
Mid-Continent Airlines, Inc.	32,022	17,628	3,865,739	4,191,349	1,506,328	1,506,328	63.48	62.35
National Airlines, Inc.	60,557	62,004	19,479,584	11,124,888	5,508,776	3,742,680	87.79	83.67
Northeast Airlines, Inc.	21,630	6,871	3,760,188	1,417,368	2,992,122	1,466,580	49.10	39.24
Northwest Airlines, Inc.	322,448	225,643	166,265,100	154,923,271	15,711,576	8,144,493	79.72	68.79
Pennsylvania-Central Airlines Corporation	626,433	403,272	111,967,686	75,995,653	10,457,811	8,218,507	78.06	68.91
Transcontinental & Western Air, Inc.	1,722,746	1,391,943	867,421,736	869,545,009	42,981,242	36,851,830	86.53	79.34
United Air Lines, Inc.	1,588,554	1,399,274	1,164,806,697	1,076,874,540	63,595,610	51,292,779	94.75	83.24
Western Air Lines, Inc.	149,354	139,225	81,566,091	59,177,558	7,340,671	4,350,546	81.17	76.55
<b>Sub total</b>	<b>8,996,988</b>	<b>7,268,904</b>	<b>4,566,303,829</b>	<b>4,150,744,578</b>	<b>299,838,669</b>	<b>256,352,408</b>	<b>87.24</b>	<b>79.88</b>
Index (1943=100)	123.77	100.00	110.01	100.00	116.96	100.00	109.21	100.00
Colonial Airlines, Inc. Hawaiian Airlines, Ltd.	27,878 1,026,189	23,633 641,192	8,379,102 162,854,799	6,332,040 98,712,386	2,337,636 2,617,560	1,757,015 2,808,992	76.65 93.32	62.74 91.13
<b>Grand total</b>	<b>10,051,055</b>	<b>7,933,729</b>	<b>4,737,537,730</b>	<b>4,255,789,001</b>	<b>304,793,865</b>	<b>260,918,415</b>	<b>87.21</b>	<b>79.89</b>
Index (1943=100)	126.69	100.00	111.32	100.00	116.82	100.00	109.16	100.00

6

	January	February	Total
Passengers carried (unduplicated) (total revenue and non-revenue) <sup>1</sup>			
16 domestic airlines			
Total airlines	250,310	229,102	479,412
Passenger miles flown (total revenue and non-revenue)			
16 domestic airlines	262,628	239,900	502,528
Total airlines	141,474,106	125,088,611	266,562,717
	143,727,253	127,107,076	270,834,329

<sup>1</sup>Preliminary: Due to the delay in reporting by some companies, these figures are subject to revision in subsequent publications.

# OFFICIAL ACTIONS . . . Civil Aeronautics Board

## ORDERS 2760 THROUGH 2824



### Airline Orders

#### Service

No. 2760 severed applications of Southwestern Air Lines, Inc., from the Latin American consolidated proceedings which concerned additional air service in Mexico, Central and South America, and the Caribbean. Southwestern's applications will be held for hearing at a future date (March 30).

No. 2762 authorized UAL to temporarily suspend service to Allentown, Pa., effective April 1, 1944. The Common Pleas Court of Lehigh County, Pa., issued a preliminary injunction February 14, 1944, prohibiting UAL from operating aircraft over farm properties adjoining the airport at an altitude of less than 100 feet (March 31).

No. 2763 permitted the City of Kansas City, Mo., to intervene in the application of Mid-Continent, Kansas City Southern Transport Co., and/or The Kansas City Southern Railway Co., Delta, and National Airlines for certificates (April 1).

No. 2764 dismissed and severed the application of PCA—Docket 1155—from the Latin American proceedings (April 1).

No. 2765 permitted the City of Kansas City, Mo., to intervene in applications for certificates—Docket 303, et al. (April 1).

No. 2766 permitted Braniff to serve Nuevo Laredo, Mexico, through the use of that city's airport beginning April 10, 1944. This service is subject to any necessary amendment of their operating certificate (April 1).

No. 2767 denied the petition of the Baton Rouge C. of C. and the Parish of East Baton Rouge, La., for permission to intervene in the applications of Mid-Continent for certificates (April 1).

No. 2778 grants TWA permission to intervene in applications for air service between the U. S. and Ottawa and Montreal, Canada (April 1).

No. 2779 permits the Port of New York Authority to intervene in applications for air service in Mexico, Central and S. America, and the Caribbean (April 8).

No. 2780 dismissed the application, upon their request, of the Kansas City Southern Transport Co., and/or Kansas City Southern Railway Co. for a certificate under section 401 of the Act (April 8).

No. 2781 ordered that Western Air Lines may inaugurate service on April 15 to San Francisco through the use of that city's Municipal Airport. The service is subject to any necessary amendment of Western's operating certificate (April 11).

No. 2782 permits Continental to inaugurate non-stop service between Denver and Pueblo, Colo., on April 15, subject to any necessary amendment of their operating certificate (April 11).

No. 2797 permits immediate inauguration of service by UAL between Sacramento, Calif., and Cheyenne, Wyo., subject to any necessary amendment of UAL's operating certificate (April 15).

No. 2805 extends for 3 months from April 30 the temporary permit by which KLM, Royal Dutch Air Lines, is operating between Miami and Curacao, N.W.I. (April 20).

No. 2806 permits Shreveport, La., Coffeyville, Kans., and Ozark Air Lines, permission to intervene in the applications of Mid-Continent, Delta, and National Airlines for certificates (April 20).

No. 2811 denied the petition of the Kansas City C. of C. for permission to intervene in applications for certificates—Docket 303, et al. (April 25).

No. 2813 permits EAL to inaugurate non-stop service on May 1 between Raleigh, N. C., and Savannah, Ga. (April 26).

No. 2814 denies EAL's petition for reconsideration of order 2747 which granted Delta's petition to exclude Eastern from the consolidated proceeding—Docket 570, et al. (April 26).

No. 2816 dismissed the application of Carolina Scenic Coach Lines for a certificate under section 401 of the Act (April 26).

No. 2817 granted TWA and Chicago and Southern permission to intervene in applications for certificates—Docket 570, et al. (April 26).

No. 2818 amended the certificates of Braniff and TWA thereby authorizing them to include Topeka, Kans., as an intermediate point between Kansas City, Mo., and Wichita, Kans., subject to certain conditions; amended the certificate of Continental so as to authorize them to include Hutchinson, Kans., as an intermediate point between Denver, Colo., and Salina, Kans., subject to certain conditions; denied the applications of Continental and TWA in all other respects (opinion and order—April 26).

No. 2820 affirmed a previous opinion and order of the Board (No. 2699) and denied the petitions of Colonial, Seaboard Airways, Inc., and EAL for reseating and rearangement of the decisions reached (April 27).

No. 2821 extended for 3 months from April 30 the temporary permit which authorized Expresso Aero Inter-American, S. A. to provide air transportation between Miami and Havana, Cuba (April 28).

#### Exemptions

No. 2761 rescinded order 2643 which had temporarily exempted Colonial Airlines from the provisions of section 401(a) of the Civil Aeronautics Act of 1938 so that they might serve Massena, N. Y. Colonial notified the Board that service could not be inaugurated with the equipment available and the Army Air Forces advised the Board that the service did not warrant the allocation of additional equipment (March 30).

No. 2793 temporarily exempts Arthur G. Woodley, doing business as Woodley Airways, from the provisions of section 401(k) of the Act, so that he may suspend service to Pedro Bay, Alaska (April 14).

No. 2794 temporarily exempts Woodley, from the provisions noted above, so that he may suspend service to Tyonek, Alaska (April 14).

#### Miscellaneous

No. 2792 adopts the new printed manual of the "Uniform System of Accounts for International Air Carriers" (April 13).

No. 2798 approves an agreement between UAL and Mid-Continent on furnishing air-conditioning service for certain aircraft (April 17).

No. 2812 approves an agreement between Northwest and Mid-Continent on furnishing air-conditioning equipment for certain aircraft (April 25).

No. 2815 approves an agreement between UAL and PCA on furnishing of certain services and replacement parts at the Washington National Airport by EAL (April 28).

No. 2822 approves an agreement between UAL and PCA on furnishing of certain services and replacement parts at the National Airport by PCA (April 28).

No. 2823 approves an agreement between Braniff and Mid-Continent on furnishing certain aircraft air-conditioning services (April 28).

No. 2824 approves an agreement between TWA and Mid-Continent relating to the furnishing of personnel and equipment for air-conditioning aircraft of Mid-Continent at St. Louis and Kansas City, Mo. (April 28).

### Airman Orders

#### Suspensions

No. 2770 suspends Frederick T. Feeley's mechanic certificate with aircraft and engine ratings until such time as he passes either the oral or practical examinations given applicants for such rating. Feeley had previously surrendered his certificate to a representative of the Administrator. Upon re-examination he did not pass the practical

examination for aircraft and aircraft engine ratings (April 5).

No. 2773 suspended Francis H. Gould's commercial certificate with flight instructor rating for 90 days and thereafter until he passes required flight tests. Gould flew into telephone lines while attempting to land at Bradley Fld., Moberly, Mo., permitted Chas. Guthrie, a student pilot, to land in a soft, recently drilled wheat field near Jetmore, Kans., and took off from an undesignated landing area in the vicinity of Jetmore April 7.

No. 2774 partially suspended the commercial certificate of Earle Bach for 1 year because he gave flying instructions when he did not hold a flight instructor rating. Bach may pilot only while testing military aircraft as an employee of North American Aviation or while under the direction and supervision of the War or Navy Departments (April 7).

No. 2777 dismisses the complaint filed by the Administrator relating to James M. Sowell's mechanic and ground instructor certificates; and also dismissed Sowell's petition for reconsideration of the Administrator's denial to issue him a parachute technician certificate with the provision, however, that he may apply for said certificate after April 21, 1944. Sowell made unauthorized alterations and repairs to several parachutes which affected their safety (April 7).

No. 2783 suspended the student certificate of Aubrey G. Thompson for 6 months beginning October 21, 1943. Thompson flew between Denton and Garland, Tex., at an altitude of less than 500 feet (April 12).

No. 2784 suspended Jerry K. Berman's mechanic certificate for 30 days beginning April 22. Berman signed a periodic aircraft inspection report at the request of a superior officer relying on the officer's indication that the work had been completed by other mechanics. The aircraft was found to be unfairworthy (April 12).

No. 2785 orders that beginning April 22 Clifford W. Collin's private certificate is suspended for 90 days. Collin flew an aircraft below 500 feet in the vicinity of Oil Center, Mich. (April 12).

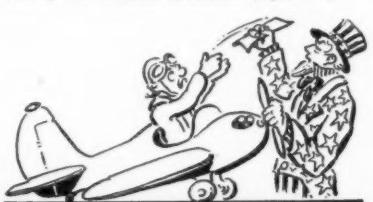
No. 2787 suspended Thom K. McDonald's student certificate for 60 days, beginning April 22, because he failed to complete the written report required concerning an aircraft accident in the vicinity of Ponca City, Okla. (April 12).

No. 2788 suspends James R. Reynolds' student certificate for 3 months beginning April 22. Reynolds violated the Civil Air Regulations by flying less than 500 feet in the vicinity of Woodward Township, Pa. (April 12).

No. 2789 suspended Nick R. Smith's mechanic certificate with aircraft and engine ratings for 90 days beginning April 22. The Board found that Smith certified an aircraft as airworthy when such defects as broken rib stitching, leaking fuel gages, no fuel strainer, etc., existed.

No. 2791 suspends Kenneth Zaenger's private certificate for 30 days beginning April 22. Zaenger performed aerobatics while on a solo flight near Toledo, Ohio, and while carrying a passenger when neither he nor the passenger were equipped with parachutes. After an emergency landing in an undesignated landing area—a corn field—he did not obtain the Administrator's approval to take off again (April 12).

No. 2799 suspended the private certificate of David H. MacFiggan for 90 days beginning April 27. MacFiggan flew an aircraft while not wearing corrective lenses as specified by his medical certificate (April 17).



No. 2800 suspends Nehemiah O. Siegfried's student certificate for 30 days beginning April 27. The Board found that he started the engine of a plane without a competent operator attending the controls and without blocks in front of the wheels. The aircraft was not equipped with adequate parking brakes (April 17).

No. 2801 suspended Donald E. Colvin's mechanic certificate. Colvin performed a 20-hour check on an aircraft engine but failed to tighten four spark plugs. This resulted in a forced landing and damage to the aircraft. Colvin's certificate was suspended for 30 days, commencing April 27, and thereafter until he passes a written and practical examination (April 17).

No. 2804 suspended the commercial certificate of Darwin J. Stair for 90 days beginning April 29. Stair performed acrobatics over Lockwood Field, Frankfort, Ind., at an altitude of less than 1,500 feet. The order also revoked his flight instructor rating.

No. 2819 suspended Victor Payette's parachute technician certificate for 90 days. Payette packed a Pioneer 'chute on which the harness and shock cord were frayed and deteriorated (April 26).

#### Revocations

No. 2768 revoked the student certificate of Richard C. Baldwin because he flew closer than 500 feet to other aircraft; while flying contact at an altitude of less than 1,500 feet he failed to conform to the "circle rule" (the Civil Air Regulations requires that "all circles, either approaching for a landing or after take-off, shall be made to the left unless the pilot receives other instructions"); and he performed acrobatic maneuvers at an altitude of less than 1,000 feet over an open air assembly of persons. All acts were committed in the vicinity of Yerington, Nev. (April 5).

No. 2769 revoked the student certificate of Clyde E. Cameron for operating an aircraft within a vital defense area; not filing a flight plan; operating an aircraft when the registration had expired; and altering his student certificate by inserting the signature of a physician. Cameron had not passed a physical examination within the preceding 12 months. The foregoing violations, including not holding an airman identification card, were committed on a flight from Beaverton, Ore., to the Army Air Base at Portland (April 5).

No. 2771 revoked Lewis J. Erick's student certificate. Erick flew at an altitude of less than 1,000 feet over Colonial Village, Chicago, Ill., less than 500 feet in the vicinity of The Village, and performed acrobatics at less than 1,500 feet (April 5).

No. 2772 revoked the commercial certificate of Victor R. Bono for piloting an aircraft in such a careless manner that he collided with a parked station wagon (April 7).

No. 2775 revoked the parachute technician certificate of Don G. W. Marshall because he supervised an unauthorized major alteration of a Swiftlik parachute. This alteration made the 'chute unsafe. Marshall also packed another parachute which was unsafe and sold three 'chutes—including the aforementioned Swiftlik—to the U. of Ga. School of Aviation for use in flight training (April 7).

No. 2776 dismissed the petition of Alfred E. Gardner for reconsideration of the Administrator's denial of his application for a parachute technician certificate with the provision that he may apply for said certificate on or after October 21, 1944. His ground instructor certificate was revoked. A complaint filed by the Administrator relating to his mechanic certificate was dismissed. Gardner signed the packing data cards for three parachutes when he knew the parachute technician who packed them had refused to sign the cards because the 'chutes were unairworthy (April 7).

No. 2786 revoked the private certificate of John P. Wells because he piloted an aircraft over a congested area near Pampa, Tex., below 1,000 feet. Wells carried a passenger on this flight with the dual controls operative and did not have in his possession his pilot or medical certificate (April 12).

No. 2790 revoked the student certificate of Thomas M. Woodward because he flew over and across the campus of North Texas Agricultural College, Arlington, Tex., lower than

1,000 feet and endangered the lives of members of a cadet corps by diving and zooming (April 12).

No. 2802 revokes Joseph M. Miklas' student certificate with the provision that he may apply for any pilot certificate for which he is qualified on or after November 14, 1944. Miklas performed acrobatics over the suburbs of Rockford, Ill. On the same occasion he flew below 1,000 feet over Rockford and below 500 feet over open country in violation of the Civil Air Regulations.

No. 2803 revokes the commercial certificate with flight instructor rating of Floyd L. Pratt because he flew less than 500 feet over highways in the vicinity of Williamstown, Lawrence, and Eudora, Kans., on four occasions, twice while accompanied by students (April 17).

No. 2807 revokes the student certificate of Francis A. Reddy because he piloted an aircraft on a solo flight from Glendale Airport, W. Va., to a settlement in the vicinity of Colerain, Ohio, when he was not certified for cross-country solo flights and when the aircraft did not have a valid aircraft airworthiness certificate. Reddy also flew less than 1,000 feet over Colerain and performed acrobatics at less than 1,500 feet (April 24).

No. 2808 revoked Ray F. Burner's private certificate. Burner performed acrobatics at an altitude of less than 1,500 feet over Leipsig, Ohio, and flew less than 500 feet above ground (April 24).

No. 2809 revoked the student certificate of Steve Nadjkovic because he flew less than 500 feet in the vicinity of Crosswell, Mich., and piloted an aircraft with dual controls operative when accompanied by a passenger who was not a certified instructor (April 24).

No. 2810 amends a previous order (No. 2669) thereby revoking the private certificate of Walter M. Zais (April 24).

#### Miscellaneous

No. 2795 dismissed the Administrator's complaint which alleged that C. W. Low who held an airline transport certificate and was captain of UAL Flight No. 22-7, landed at the Army Air Field, New Castle, Del., when the intended destination of the flight was the Philadelphia Municipal Airport. New Castle was not listed on UAL's air carrier operating certificate as a stop. The Board ordered that Low be reprimanded but no other action was taken (April 5).

No. 2796 orders that the exceptions to the examiner's report concerning Pierce P. O'Carroll who holds a commercial certificate be assigned for oral argument before the Board on April 26 at 10 a. m.

#### Regulations

Reg. 304—Effective Apr. 11, 1944

Military airplanes of the United States making ferry flights over civil airways in compliance with all other contact flight rules may: (1) Take off from or fly over airports where the local visibility conditions are below the minimum visibility requirements for operation under contact flight rules, if the visibility elsewhere along the civil airways to be flown is above the minimum required by contact flight rules; and (2) be dispatched to fly in the clear above an overcast if the ceiling at both the point of departure and at point of intended landing is unlimited and a contact flight plan has been filed in accordance with section 60.1330.

This regulation shall terminate at the end of the war.

Regulation Serial Number 267 is hereby repealed.

Amtd. 60-5—Effective Apr. 17, 1944

60.115 Range approach channel. A standard range approach channel as designated by the Administrator is the air space above the ground or water below 17,000 feet above sea level located within 2 miles of the center line of the on-course signal of any leg of a radio range station and extending along such leg between points 2 and 15 miles from the radio range station exclusive of control zones: Provided, That such range approach channels may be modified or extended by the Administrator when he deems it necessary in the interest of safety.

## 4 Aircraft Mechanics Suspended by the CAB

Certificates of four airplane mechanics have been suspended since the first of the year by the Civil Aeronautics Board and the cases of six others are pending. Cause for the action was signing periodic inspection reports on repairs and ground work which they did not themselves perform, or failure to inspect work performed by another.

Because of the marked increase in such violations, the Board wishes to call the attention of all aircraft mechanics to the fact that a federal mechanic's certificate issued by the CAA is both a license and a diploma which certifies to the competency and reliability of the holder. This certificate places responsibility upon the mechanic and serves as evidence of his skill. The Board intends to vigorously penalize certificated mechanics for any laxity or carelessness in connection with work on aircraft.

It is just as important for a certificated mechanic to fulfill his responsibility in connection with ground work on aircraft as it is for the pilot to fulfill his responsibility to fly the aircraft ably and safely, the Board said. Carelessness in work technique or weakness of responsibility on the part of an aviation mechanic is inexcusable at any time; in wartime it verges on sabotage!

## CAA Approves New Propellers

### New Type

Hartzell: 796, wood, 86 in., diameter, 60 in. pitch, 145 hp, 2050 rpm.

### New Models

Gwinn-Stone: GSIC, GSIC-2, GSIC-4; wood: 72 in., 70 in., 68 in. diameter, respectively; 57 in. to 30 in. pitch; 75 hp, 2650 rpm.

Gwinn-Stone: GSIL, GSIL-2, GSIL-4, and GSIL-6; wood: 72 in., 70 in., 68 in. and 66 in. diameter, respectively; 42 in. to 34 in. pitch; 75 hp, 2550 rpm.

G. B. Lewis: L33, L33-1, -2, and -3; wood: 72 in., 71 in., 70 in. and 79 in. diameter, respectively; 57 in. to 39 in. pitch; 75 hp, 2575 rpm.

## Airmail to Ohio Town

The Civil Aeronautics Board has authorized All American Aviation, Inc., to provide pick-up service at Athens, Ohio, for mail and express as an additional intermediate point on the system of that carrier. This decision was based upon the fact that mail service to Athens would be improved by inauguration of the All American service, and the recommendation of the Postmaster General that such service would be of considerable benefit to the users of airmail.

## LETTER TO THE EDITOR

All inquiries pertaining to the editorial content of the JOURNAL should be addressed thus: Editor, Civil Aeronautics Journal, Reference A253, Civil Aeronautics Administration, Washington 25, D. C.

# AIR REGULATIONS . . . As of May 1, 1944

## Civil Air Regulations

### Aircraft

PART NO.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
01	AIRWORTHINESS CERTIFICATES	10-15-42	On sale at GPO	\$0.05	
02	TYPE AND PRODUCTION CERTIFICATES	3-1-41	On sale at GPO	.05	
04	AIRPLANE AIRWORTHINESS	11-1-43	On sale at GPO	.15	
13	AIRCRAFT ENGINE AIRWORTHINESS	8-1-41	On sale at GPO	.05	
14	AIRCRAFT PROPELLER AIRWORTHINESS	7-15-42	On sale at GPO	.05	
15	AIRCRAFT EQUIPMENT AIRWORTHINESS	4-15-44	In stock; order from CAA only	.05	
16	AIRCRAFT RADIO EQUIPMENT AIRWORTHINESS	2-13-41	On sale at GPO	.05	
18	Maintenance, REPAIR, AND ALTERATION OF CERTIFIED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS.	9-1-42	On sale at GPO	.05	

### Airmen

20	PILOT CERTIFICATES	2-15-44	On sale at GPO	\$0.10	
21	AIRLINE TRANSPORT PILOT RATING	10-1-42	On sale at GPO	.05	21-1, thru 21-3, Reg. Ser. 278.
22	LIGHTER-THAN-AIR PILOT CERTIFICATES	10-15-42	On sale at GPO	.05	Reg. Ser. 247.
24	MECHANIC CERTIFICATES	7-1-43	On sale at GPO	.05	
25	PARACHUTE TECHNICIAN CERTIFICATES	12-15-43	On sale at GPO	.05	
26	AIR-TRAFFIC CONTROL-TOWER OPERATOR CERTIFICATES	2-1-44	On sale at GPO	.05	
27	AIRCRAFT DISPATCHER CERTIFICATES	10-1-43	On sale at GPO	.05	
29	PHYSICAL STANDARDS FOR AIRMEN	6-1-42	On sale at GPO	.05	29-1.

### Air Carriers

40	AIR CARRIER OPERATING CERTIFICATION	11-1-42	On sale at GPO	\$0.10	40-1, 40-2.
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### Air Agencies

50	FLYING SCHOOL RATING	11-1-40	On sale at GPO	\$0.05	87, 113, 50-3, Reg. No. 216. <sup>1</sup>
51	GROUND INSTRUCTOR RATING	12-15-43	On sale at GPO	.05	
52	REPAIR STATION RATING	10-1-42	On sale at GPO	.05	
53	MECHANIC SCHOOL RATING	8-1-42	On sale at GPO	.05	
54	PARACHUTE LOFT CERTIFICATES AND RATINGS	1-21-43	On sale at GPO	.05	

### Air Navigation

60	AIR-TRAFFIC RULES	11-15-43	On sale at GPO	\$0.10	60-1, 60-2, 60-3, 60-4, 60-5
61	SCHEDULED AIR-CARRIER RULES	2-1-44	On sale at GPO	.10	
66	FOREIGN AIR-CARRIER REGULATIONS	1-15-42	On sale at GPO	.05	

### Miscellaneous

97	RULES OF PRACTICE GOVERNING SUSPENSION AND REVOCATION PROCEEDINGS	12-10-43	In stock; order from CAA only		
98	DEFINITIONS	10-15-42	On sale at GPO	\$0.05	
99	MODE OF CITATION OF REGULATIONS	11-15-40	In stock; order from CAA only		

### Regulations of the Administrator

501	AIRCRAFT REGISTRATION CERTIFICATES	3-31-43	In stock; order from CAA only		
503	RECORDATION OF AIRCRAFT OWNERSHIP	3-31-43	In stock; order from CAA only		
510	GENERAL REGULATIONS, WASHINGTON NATIONAL AIRPORT	9-25-41	In stock; order from CAA only		
511	GENERAL AERONAUTICAL RULES FOR THE WASHINGTON NATIONAL AIRPORT	9-25-41	In stock; order from CAA only		
525	NOTICE OF CONSTRUCTION OR ALTERATION OF STRUCTURES ON OR NEAR CIVIL AIRWAYS	7-23-43	In stock; order from CAA only		
531	SEIZURE OF AIRCRAFT	12-8-41	In stock; order from CAA only		
532	REPRODUCTION AND DISSEMINATION OF CURRENT EXAMINATION MATERIALS	1-15-43	In stock; order from CAA only		
600	DESIGNATION OF CIVIL AIRWAYS	3-1-42	Not published <sup>2</sup>		1 thru 44. <sup>2</sup>
601	DESIGNATION OF AIRWAY TRAFFIC CONTROL AREAS, ETC.	1-15-42	Not published <sup>2</sup>		1 thru 67. <sup>2</sup>

### Civil Aeronautics Manuals

04	AIRPLANE AIRWORTHINESS	2-1-41	Out of stock		Release 50, 97, <sup>3</sup> 105, <sup>3</sup> 117, <sup>1</sup> 140. <sup>3</sup>
14	AIRCRAFT PROPELLER AIRWORTHINESS	12-1-38	Out of stock		
15	AIRCRAFT EQUIPMENT AIRWORTHINESS	7-1-38	On sale at GPO	.10	
16	AIRCRAFT RADIO EQUIPMENT AIRWORTHINESS	2-13-41	In stock; order from CAA only	.50	Release 62.
18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFIED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS	6-1-43	On sale at GPO	.50	
50	FLYING SCHOOL RATING	12-40	In stock; order from CAA only		Release 77, 111.
52	REPAIR STATION RATING	2-41	In stock; order from CAA only		
53	MECHANIC SCHOOL RATING	5-40	Out of stock		
60	AIR TRAFFIC RULES	8-1-43	On sale at GPO	.15	

<sup>1</sup> No copies available. (Waiver of requirements.) Consult CAA inspector for specific provisions of this amendment.

<sup>2</sup> See Air Navigation Radio Aids. <sup>3</sup> Only pertinent pages furnished.

## Stelle

(Continued from page 55)

"Stabilizer or tab adjustment mechanisms are subject to rapid wear and bending on certain models of airplanes. Design should provide for long periods of trouble-free operation of this item.

"It is wondered if thought has ever been given to using a hydraulic system of control actuation on the light airplane, as through such a system very few working parts would be between the central control column and the control surfaces.

### Tank Trouble

"Chafing against support straps and leakage at corner seams have occasionally been reported as difficulties with fuel tanks.

"Another difficulty has been that fittings in the bottom of certain tanks have extended up into the tanks and in such a manner have tended to trap and hold water along the tank bottoms. Corrosion has been a natural result.

"Gascolators have come in for their share of criticism and the majority of this had to do with the method of sealing the glass bowl against the metal top. It would be well if there could be designed a gascolator which did not require the gasket method of sealing as frequent removal results in the frequent need for new gaskets, or may lead to use of a sealing component with its resultant possibility of restricting gasoline flow.

"Research concerning tail shock assembly may in the future lead to development of a trouble free unit. Reports indicate that when springs are 'beefed up' sufficiently as to preclude breakage damage is caused to fuselage structure and the lesser of two evils is seemingly to allow the springs to break—which they do quite regularly.

"The horizontally opposed engines, as the airframes, have as a general rule performed their task splendidly. Reports, however, have revealed certain difficulties which are enumerated by component. In all probability mention of these will act as a stimulus for improvement.

### Idling Worst Offender

"By far the greatest number of reported malfunctions have been in respect to idling; the difficulty resulting in engine stoppage during closed or reduced throttle operations such as in practice during glides, practice spins, power-off stalls or other closed throttle operations. Operation instructions have been released on the subject and have had their effect on reducing this trouble. The human element, however, plays a large part in such instructions and the problem is still present in a large measure.

"Probably the most common operational cause is improper idling adjustment of the carburetor. Difficulty here is probably chargeable to maintenance.

"Dirt and dust in idling passages has been found to be a common cause of

## Early Aviation Law

Air aviation as it is known today is less than a half century old yet the first aviation accident record antedates the Kitty Hawk flight by more than eighty years.

In 1822 a balloonist named Guille came down abruptly in the garden of one Mr. Swan. Being considerably involved in the balloon rigging and very uncomfortable besides Mr. Guille called for help.

Members of the crowd who had followed his flight came to his aid and Mr. Swan's vegetables suffered damage to the extent of \$90 which the court ordered Mr. Guille to pay.

Another mile post in aerial jurisprudence was set up 110 years after the Guille incident when in 1932 the Court of Appeals, Sixth District, demolished the age-old maxim; "Whose the soil is, his it is from the heavens to the depths of the earth." In the case referred to the court refused to restrain the defendant from flying an airplane over the property of the plaintiff.

failure. Consideration should probably be given to the use of air filters or to relocation of air intake positions in an endeavor to overcome this situation.

"Loose carburetor shaft bushings and insecure carburetor mounting has reportedly been responsible for engine stoppage during idling. In either case mixture is affected. Design insofar as anchorage is concerned, is in all probability not at fault; however, rapid wear at shaft ends is something which may be overcome on the drawing board.

"Lack of proper temperature of oil and engine has seemingly been a major contributor to idling difficulty both from the standpoint of friction within the engine and the effect upon proper mixture of air and gasoline.

"Seemingly the most vulnerable spot on exhaust valves is at the stem near the head. A study to eliminate such breakage should probe into whether or not forging defects, light design, overheating, improper spring arrangement or a combination of two or three of these are the contributing causes.

"Serious trouble has been reported in certain cases where crankcase breather lines have been routed to exhaust into the carburetor intake. The purpose of this was to insure a clean installation. However, practice has proven that the cold air in the vicinity of the intake will often freeze the condensate present in the breather line and the line will become completely plugged with ice and result in high crankcase pressures being built up. Likewise, venting of moisture laden air into the carburetor has reportedly had the same effect as spraying water from a garden hose into the venturi of the carburetor. Such is conducive to rapid ice formation during cold weather. In all probability, there will be designed some sort of trap which will catch crankcase vapors and also preclude stoppage of the vent."

## Burden

(Continued from page 55)

Advisory Committee for Aeronautics, now entirely engaged in solving urgent problems of military aircraft design, have been greatly expanded as a result of the war and with the coming of peace can be devoted more completely to basic research which will be important to all branches of aviation. They should and will be made available on an increasing scale for research on basic problems which are of special and peculiar importance to the design of private aircraft—I refer to such matters as non-spinning characteristics, noise reduction and propeller design. The gap between military and transport flying and private flying has widened. I consider it definitely in the interest of the country that research projects be vigorously prosecuted which have major significance primarily for private flying.

"The construction of a comprehensive and intelligently planned system of landing facilities is as essential to the growth of private flying as the development of our system of roads was to the expansion of the passenger automobile industry.

"The landing area requirements of the private flier are far simpler than those of the scheduled airline. Small L or T shaped fields with 1800 to 2500 foot runways will suffice, but it is essential that they be located very close to the residential and business district of the town. Because of their small size they can be.

"In the matter of financing these landing areas, government support—federal, state and local—will probably carry an important part of the load, but individual initiative is also extremely necessary.

"Federal assistance for the construction of air fields for the private flier is, in my opinion, advisable and justifiable and I hope that Congress will take the same view when it considers the matter of legislation for a long-term program of civil airport construction.

### National Park Airports

"The government should, I believe, provide landing facilities in its national parks and forests and we have recently arranged with the Parks and the Forest Services to cooperate in the surveying of sites and drawing up of plans for the development of airports, in and adjacent to the entrances, of the areas controlled by these two services.

"Summing up, I believe the government's place in the development of private flying should be: (1) To provide federal aid in the construction of landing fields and promote and assist in the provision of a system of markers for the private pilot throughout the country; (2) To conduct basic research projects looking toward the improvement of the personal airplane; (3) To limit its regulation to that regulation required to provide reasonable protection for the public; (4) To promote aviation education in the schools, including financial assistance for flight instruction."

# Danger in Air Stunting Sharply Accented

## Eight Persons Killed In Skylarking Accidents In Less Than Four Months

Gruesome emphasis is placed on the danger of frolicking by the record of air accidents reported to the Civil Aeronautics Board during a period of less than 4 months ending September 5, 1943. During that time at least eight persons were killed in crashes traceable to caper-cutting in the air. In one a father and son, the latter an army lieutenant home on furlough, lost their lives.

Age is apparently no guarantee of judgment or caution for the oldest of the victims was 58 and two of the others were in their forties.

**Killed Himself and Son.** William James Mallen, 44, and his son, Lt. William James Mallen Jr., 21, home on leave, took off from Akron, Ohio, Municipal Airport, September 5, 1943, at 11:40 a. m. and 10 minutes later they were dead on the grounds of the Mayfair Country Club.

Mallen senior held a private certificate and was estimated to have accumulated about 1,000 solo hours. The son was not certified as an airman.

Several witnesses saw the plane stunting in the vicinity of the country club. After swooping and circling the clubhouse several times the pilot made a steep power dive toward a friend, the manager of the club, who was in an open area near the club. He dropped to the ground for protection. The pilot pulled up and the plane sheared off the top of a small pine tree and the left landing wheel hit a corner of the building. The plane zoomed to about 150 feet, flipped and landed, bottom up. After sliding about 400 feet it was stopped by a tree.

The manner in which the propeller blades were splintered indicated considerable power was being developed at the time of the accident. Dual controls were operative. The probable cause of the crash was reckless action of the pilot who "displayed little or no regard for the safety of himself or others."

**Low Flying Costs Two Lives.** Pilot Lynn Whitson Dobbs flew his plane back toward the Texas farm house he had circled a couple of times when it went into a spin and crashed. No one will ever know why he flew back for both he and his student, Lund Stocki were killed in the accident.

Dobbs held a commercial license and flight instructor ratings. He had about 928 hours flying time. Stocki was a War Training Service trainee and was taking the Army 10-hour indoctrination course.

Shortly after taking off from Dagley Field, Tex., August 3, 1943, the plane was seen to circle the farm house at an altitude of between 200 and 300 feet and then fly off to the northwest about one-half mile. There a 180° turn was made and it headed back. The engine stalled and the plane dropped nose first.

The wreckage revealed no evidence of failure of any part of the aircraft prior to the accident. The manner in which the wooden propeller was broken indicated that little or no power was being developed at the time of impact. A witness stated that the engine seemed to be

operating normally when the airplane circled the house but that it was throttled back just before the spin; that recovery from the spin was nearing completion when the plane fell off again and struck the ground. There was sufficient fuel for continued flight. Weather conditions were suitable for flying. The terrain in the vicinity of the accident was suitable for a safe forced landing.

The probable cause of this accident was an inadvertent stall and spin at a low altitude from which complete recovery was not effected.

**He Waved His Hand and Died.** At Lake Freeman, about 45 minutes flying time from the Hoosier Airport, Indianapolis, Ind., Carl Fenton Millican, 58, circled his cottage several times at a height of 500 feet or less; waved to a friend and crashed. The plane burst into flames and rescuers were unable to reach Millican. He held a private certificate and had accumulated 800 hours flying time. The accident occurred July 11, 1943.

The report shows he had flown about one-half mile from the lake at a low altitude when the airplane was seen to enter an extremely abrupt turn to the left. During this turn it was stalled and fell off into a left spin. Rotation was stopped after about one and a half turns and the craft, still nosed down at a 45° angle, struck the ground.

### Blizzard Teaches Town Need for Plane Service

The importance of the airplane in the daily lives of persons who have been marooned or are likely to be isolated by weather conditions is disclosed by a communication recently received by the Civil Aeronautics Administration from a man living in a small South Dakota town.

He writes: "We are interested in aviation more than ever before after having been snowbound from January 25 to April 1. On several occasions during this period it was necessary to phone to the Black Hills to have a plane come up here to take patients to the hospital or to take ranchers to their homes from automobiles stalled in the drifts."

The writer's specific interest in flying centered on the establishment of aviation instruction as one of the subjects taught in the local school.

Examination revealed no evidence of failure of any part of the aircraft prior to the accident and the manner in which the propeller was broken indicated that considerable power was being developed at the time the plane struck the ground.

The probable cause of this accident was the pilot's reckless flying which resulted in an accidental spin at an altitude too low for complete recovery.

**Fatal Merrymaking In The Air.** Friends of John Francis Johns, 42, watched him prancing in the air over their home at Derry, Pa., August 1, 1943, but they only heard the crash a few seconds later in which he died. He held a student certificate, which had not been endorsed for cross-country flying, and had about 17 hours of solo flight time.

Johns obtained clearance for a cross-country flight to Leechburg, Pa., and took off from the New Alexandria, Pa., Airport. He was observed a few minutes later in the vicinity of Derry, at an altitude of 200 to 300 feet, circling the home of friends and waving and shouting to them as he flew over their house. After several minutes of reckless flying he headed toward New Alexandria, still at a low altitude. His friends did not see the flight thereafter but a few seconds later they heard a crash and located the aircraft on a hillside about 400 feet from their house.

Examination of the wreckage revealed no evidence of failure of any part of the aircraft prior to the accident and the manner in which the propeller was broken indicated that considerable power was being developed at the time of impact.

Johns displayed little or no regard for safety in his apparent effort to "show off" and it appears that in so doing he inadvertently stalled the airplane at a low altitude. The probable cause of this accident was recklessness and overconfidence on his part.

**Death at a Family Reunion.** Roy Ellison Smith and his brother-in-law, Henry Voltz, were killed in a crash at the Smith homestead where kinfolks had gathered for a reunion. Smith put on a show for them but neither he nor Voltz lived to hear any applause. Pilot Smith had flown for about 119 hours.

Smith and Voltz, took off from the Mansfield Municipal Airport and flew at a fairly high altitude in the vicinity of the home of the pilot's father, where a number of persons were gathered for a family reunion. Following a series of aerobatic maneuvers, which terminated at an altitude of about 200 feet, the pilot flew very low directly over the farmhouse. He then made a steep turn to the left during which the airplane was stalled. It crashed to the ground before recovery could be effected.

It is evident that the pilot, while flying recklessly and putting on a show for his friends and relatives, stalled and lost control of the aircraft at an altitude too low to effect recovery.

